

What is claimed is:

1. A coil coating composition comprising:
  - (a) a first polyester having an hydroxyl number of at least about 80 mg KOH/g polyester, prepared by condensation of
    - a polyol component consisting essentially of a flexibilizing diol, a branched diol selected from the group consisting of 2-methyl-1,3-propanediol, 2,2,4-trimethyl-1,3-pentanediol, 2-ethyl-2-butyl-1,3-propanediol, propylene glycol, neopentyl glycol, and combinations thereof, and, optionally, a polyol having at least three hydroxyl groups and
    - an acid component consisting essentially of one or more aromatic or cycloaliphatic dicarboxylic acids and, optionally, a polyacid having at least three carboxyl groups,wherein at least one of the polyol having at least three hydroxyl groups or the polyacid having at least three carboxyl groups is included;
  - (b) a second polyester having an hydroxyl number of at least about 44 mg KOH/g polyester, prepared by condensation of
    - a polyol component consisting essentially of a flexibilizing diol and a branched diol selected from the group consisting of 2-methyl-1,3-propanediol, 2,2,4-trimethyl-1,3-pentanediol, 2-ethyl-2-butyl-1,3-propanediol, propylene glycol, neopentyl glycol, and combinations thereof and
    - an acid component consisting essentially of one or more aromatic or cycloaliphatic dicarboxylic acids; and
  - (c) a crosslinking agent.

2. A coil coating composition according to claim 1, wherein the flexibilizing diol of the first polyester and the flexibilizing diol of the second polyester are each independently selected from the group consisting of  $\alpha,\omega$ -alkylene diols having four or more carbon atoms, diols containing cyclic moieties, dimer fatty alcohol, and combinations thereof.

3. A coil coating composition according to claim 1, wherein the flexibilizing diol of the first polyester and the flexibilizing diol of the second polyester are each independently selected from the group consisting of 1,4-butanediol, 1,6-hexanediol, cyclohexanedimethanol, dimer fatty alcohol, and combinations thereof.

4. A coil coating composition according to claim 1, wherein the polyol having at least three hydroxyl groups is included and is selected from the group consisting of trimethylolethane, trimethylolpropane, pentaerythritol, and combinations thereof.

5. A coil coating composition according to claim 1, wherein the polyacid having at least three carboxyl groups is included and is selected from the group consisting of trimellitic anhydride, pyromellitic dianhydride, and combinations thereof.

6. A coil coating composition according to claim 1, wherein the polyol component of the first polyester consists essentially of

from about 6.5% by weight to about 23% by weight of the flexibilizing diol,

from about 41% by weight to about 75% by weight of the branched diol,

and

from about 15% by weight to about 46% by weight of the polyol having at least three hydroxyl groups,

based on the total combined weights of the flexibilizing diol, the branched diol, and the polyol having at least three hydroxyl groups.

7. A coil coating composition according to claim 1, wherein the polyol component of the first polyester consists essentially of

from about 8% by weight to about 20% by weight of the flexibilizing diol,

from about 45% by weight to about 65% by weight of the branched diol,

and

from about 20% by weight to about 40% by weight of the polyol having at least three hydroxyl groups,

based on the total combined weights of the flexibilizing diol, the branched diol, and the polyol having at least three hydroxyl groups.

8. A coil coating composition according to claim 1, wherein the aromatic or cycloaliphatic dicarboxylic acid of the first polyester and the aromatic or cycloaliphatic dicarboxylic acid of the second polyester are each independently selected from the group consisting of isophthalic acid, butylisophthalic acid, terephthalic acid, dimethyl terephthalate phthalic anhydride, hexahydrophthalic anhydride, tetrahydrophthalic anhydride, 4-methyl-tetrahydrophthalic anhydride, 4-methyl-hexahydrophthalic anhydride, endomethylene tetrahydrophthalic anhydride, 1,2-cyclohexanedicarboxylic anhydride, 1,3-cyclohexanedicarboxylic acid, 1,4-cyclohexanedicarboxylic acid, and combinations thereof.

9. A coil coating composition according to claim 1, wherein the first polyester has an hydroxyl number of from about 80 to about 160 mg KOH/ gram nonvolatile.

10. A coil coating composition according to claim 1, wherein the first polyester has an hydroxyl number of from about 80 to about 145 mg KOH/ gram nonvolatile.

11. A coil coating composition according to claim 1, wherein the first polyester has a number average molecular weight from about 2800 to about 3600 and a weight average molecular weight from about 5400 to about 8000.

12. A coil coating composition according to claim 1, wherein the polyol component of the second polyester consists essentially of  
from about 22% by weight to about 50% by weight of the flexibilizing diol  
and  
from about 50% by weight to about 78% by weight of the branched diol,  
based on the total combined weights of the flexibilizing diol and the branched diol.

13. A coil coating composition according to claim 1, wherein the polyol component of the second polyester consists essentially of  
from about 25% by weight to about 45% by weight of the flexibilizing diol  
and  
from about 55% by weight to about 75% by weight of the branched diol,  
based on the total combined weights of the flexibilizing diol and the branched diol.

14. A coil coating composition according to claim 1, wherein the polyol component of the second polyester consists essentially of  
from about 30% by weight to about 40% by weight of the flexibilizing diol  
and  
from about 60% by weight to about 70% by weight of the branched diol,  
based on the total combined weights of the flexibilizing diol and the branched diol.

15. A coil coating composition according to claim 1, wherein the second polyester has an hydroxyl number of from about 44 to about 75 mg KOH/gram nonvolatile.

16. A coil coating composition according to claim 1, wherein the second polyester has an hydroxyl number of from about 44 to about 60 mg KOH/gram nonvolatile.

17. A coil coating composition according to claim 1, wherein the second polyester has a number average molecular weight from about 3800 to about 5200 and a weight average molecular weight from about 5400 to about 8000.

18. A coil coating composition according to claim 1, wherein the crosslinking agent comprises a melamine formaldehyde resin and wherein the composition further comprises a strong acid catalyst.

19. A coil coating composition according to claim 1, comprising about 5% by weight to about 25% by weight of the first polyester; about 60% by weight to about 80% by weight of the second polyester; and about 5% by weight to about 25% by weight of the crosslinking agent, based on the total combined nonvolatile weights of the first polyester, the second polyester, and the crosslinking agent.

20. A method of coating a coil of metal, comprising applying a coating composition to the coil of metal and curing the applied coating composition to form a cured coating, wherein the coating composition comprises a coating composition according to claim 1.

21. A method according to claim 20, wherein the applied coating composition is cured with a peak metal temperature of from about 182°C. to about 232°C.

22. A method according to claim 20, wherein the applied coating composition is cured with a peak metal temperature of from about 182°C. to about 193°C.

23. A coil of metal coated according to the method of claim 20.

24. A cured coating comprising a cured layer of the coating composition of claim 1.

25. A coil coating composition comprising:

(a) a first polyester prepared by condensation of a polyol component consisting essentially of a flexibilizing diol, 2-methyl-1,3-propanediol, and a polyol having at least three hydroxyl groups and an acid component consisting essentially of isophthalic acid;

(b) a second polyester prepared by condensation of a polyol component consisting essentially of a flexibilizing diol and 2-methyl-1,3-propanediol and an acid component consisting essentially of isophthalic acid; and

(c) a crosslinking agent.

26. A coil coating composition according to claim 25, wherein the flexibilizing diol of the first polyester and the flexibilizing diol of the second polyester are each independently selected from the group consisting of 1,4-butanediol, 1,6-hexanediol, cyclohexanedimethanol, dimer fatty alcohol, and combinations thereof.



27. A coil coating composition according to claim 25, wherein the polyol component of the first polyester consists essentially of

from about 8% by weight to about 20% by weight of the flexibilizing diol,

from about 45% by weight to about 65% by weight of 2-methyl-1,3-propanediol, and

from about 20% by weight to about 40% by weight of the polyol having at least three hydroxyl groups,

based on the total combined weights of the flexibilizing diol, 2-methyl-1,3-propanediol, and the polyol having at least three hydroxyl groups.

28. A coil coating composition according to claim 25, wherein the polyol component of the second polyester consists essentially of

from about 22% by weight to about 50% by weight of the flexibilizing diol

and

from about 50% by weight to about 78% by weight of 2-methyl-1,3-propanediol,

based on the total combined weights of the flexibilizing diol and 2-methyl-1,3-propanediol.

29. A coil coating composition according to claim 25, wherein the polyol component of the second polyester consists essentially of from about 25% by weight to about 45% by weight of the flexibilizing diol and from about 55% by weight to about 75% by weight of 2-methyl-1,3-propanediol, based on the total combined weights of the flexibilizing diol and 2-methyl-1,3-propanediol.

30. A coil coating composition according to claim 25, comprising about 5% by weight to about 25% by weight of the first polyester; about 60% by weight to about 80% by weight of the second polyester; and about 5% by weight to about 25% by weight of the crosslinking agent, based on the total combined nonvolatile weights of the first polyester, the second polyester, and the crosslinking agent.

31. A method of coating a coil of metal, comprising applying a coating composition to the coil of metal and curing the applied coating composition to form a cured coating, wherein the coating composition comprises

(a) a first polyester prepared by condensation of a polyol component consisting essentially of a flexibilizing diol, 2-methyl-1,3-propanediol, and a polyol having at least three hydroxyl groups and an acid component consisting essentially of isophthalic acid;

(b) a second polyester prepared by condensation of a polyol component consisting essentially of a flexibilizing diol and 2-methyl-1,3-propanediol and an acid component consisting essentially of isophthalic acid; and

(c) a crosslinking agent.

32. A method according to claim 31, wherein the applied coating composition is cured with a peak metal temperature of from about 182°C. to about 232°C.

33. A coil of metal coated according to the method of claim 31.